

REMARKS

Status Summary

In this amendment, no claims are canceled and claim 39 is added. Therefore, upon entry of this amendment, claims 1-39 will be pending.

Information Disclosure Statement

The Information Disclosure Statement filed on July 1, 2002 was objected to as failing to include an English language translation of two of the documents. English translations of the documents are attached hereto. Accordingly, it is respectfully requested that these documents now be considered. For the Examiner's convenience, Applicants have attached two copies of Form PTO-1449 listing the English translation of the non-English documents filed in the Information Disclosure Statement filed on July 1, 2002.

Drawings

The drawings were objected to as failing to disclose $2n$ reactive compensation elements in claim 14. Applicants respectfully direct the Examiner's attention to Figure 7A of the present application. In Figure 7A, each current loop is divided into n sections. Each magnetic current loop also includes n reactive compensation elements. Since there are two current loops, each with n reactive compensation elements and n sections, the system includes $2n$ reactive compensation elements for the $2n$ sections, as recited by claim 14. Accordingly, it is respectfully submitted that Figure 7A supports claim 14, and the objection to the drawings should be withdrawn.

Specification

The disclosure was objected to as containing an informality on page 13. The informality has been corrected as requested by the Examiner.

Allowable Subject Matter

Claims 3, 17-20, and 28 were objected as being dependent upon a rejected base claim. Claim 3 has been rewritten in independent form to include all of the limitations of claims 1 and 2 from which claim 3 formerly depended. Accordingly, claim 3 should now be allowed.

Claim 17 has been rewritten in independent form to include all of the limitations of the claims 14 and 15 from which it formerly depended. Accordingly, independent claim 17 and dependent claims 18-20 should now be allowed.

Claim 28 has been rewritten in independent form to include all of the limitations of claims 24 and 27 from which it formerly depended. Accordingly, claim 28 should now be allowed.

Claim Objections

Claim 30 was objected as containing informalities. Claim 30 has been amended as requested by the Examiner.

Claim Rejection - 35 U.S.C. § 112

Claim 23 is rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. In particular, the Examiner indicated that the

specification failed to teach choosing the reactive compensation such that the time constant of the series resistance and the effective series capacitance would be equal to the time constant of the parallel resistance and the parallel capacitance of each section. It is well settled that the claims constitute part of the specification and that the specification can be amended to include subject matter in the claims. (See MPEP § 2163). The specification has been amended on page 6 to recite the subject matter of claim 23. Accordingly, the specification supports the literal wording of claim 23.

In addition, Applicants respectfully submit that a person of the ordinary skill in the art would know how to compute a time constant of an RC circuit. The time constant of an RC circuit is the product of the resistance and the capacitance. Claim 23 recites that the product of the series resistance and the effective series capacitance is equal to the product of the parallel resistance and the parallel capacitance. Using Figure 8 as an example, claim 23 recites that $C_{E1} \times R_{S1} = C_{P1} \times R_{P1}$. Accordingly, for these reasons, it is respectfully submitted that the rejection of claim 23 under 35 U.S.C. § 112, first paragraph should be withdrawn.

Claim Rejections 35 U.S.C. § 102

Claims 21, 22, 24-27, and 29-32 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 2,166,750 to Carter (hereinafter, "Carter"). This rejection is respectfully traversed.

Independent claims 21 and 24 have each amended to recite that the system includes a plurality of magnetic current loops that are coupled to each other and driven in opposite directions to produce a strong magnetic field near the magnetic current

loops and to substantially cancel dipole magnetic fields produced by the magnetic current loops at distances far from the magnetic current loops. Such a system is useful in magnetic current loop systems where it is desirable to read identification tags at locations close to the magnetic current loops without producing undesirable far field radiation. Adding reactive compensation to such systems enables precise control of the magnetic fields generated by each magnetic current loop such that the dipole fields will cancel at distances far from the magnetic current loops.

There is absolutely no disclosure in Carter of a magnetic current loop system that includes reactive compensation elements where the current loops are coupled to each other to produce a strong magnetic field near the magnetic current loops and such that the dipole fields produced by the magnetic current loops cancel at distances far from the loops. The Examiner correctly notes that Figure 3 and columns 1 and 2 of Carter mention adding reactive compensation to sections of an antenna to tune the self-inductance of each section. However, there is no disclosure in Carter of connecting multiple loops together, producing strong near fields or canceling far dipole fields. In fact, the system disclosed in Carter is directed to broadcasting television signals. (See column 1, lines 5-10 of Carter.) The goal of a television broadcast antenna is to increase, rather than decrease, far fields. Accordingly, it is respectfully submitted that Carter fails to disclose a magnetic current loop system that produces strong magnetic fields near the magnetic current loops and that cancels the dipole magnetic fields far from the magnetic current loops. Because Carter fails to disclose a magnetic current loop system as claimed in independent claims 21 and 24, it is respectfully submitted

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that the rejection of claims 21 and 24 and their dependent claims as anticipated by Carter should be withdrawn.

Claim Rejections 35 U.S.C. § 103

Claims 1, 2, 4-16, and 33-38 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,914,692 to Bowers et al. (hereinafter, "Bowers") in view of Carter. This rejection is respectfully traversed.

Independent claims 1, 14, 33, and 38 have been amended to recite that the magnetic current loops are coupled to each other and driven to produce strong magnetic fields near the magnetic current loops and to substantially cancel dipole magnetic fields produced by the current loops at distances far from the magnetic current loops. In addition, the magnetic current loops include reactive compensation on a per section basis to enable more precise control of the magnetic fields to further increase the likelihood of strong near fields and weak far fields.

As a preliminary matter, it is respectfully submitted that there is no motivation in Carter or Bowers to modify the system of Bowers to include reactive compensation, as disclosed by Carter. As stated above, Carter is directed to a loop antenna for broadcast television. The purpose of such an antenna is to increase far fields. In contrast, Bowers is directed to a loop antenna that is designed to produce weak far fields. (See e.g., column 2, lines 16-40 of Bowers.) Because the teachings of Carter and Bowers conflict, it is respectfully submitted that a person of skill in the art would not be led to combine the disclosures of Carter and Bowers. Accordingly, for this reason, the

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rejection of the independent claims 1, 14, 33, and 38 and their respective dependent claims as unpatentable over Bowers in view of Carter should be withdrawn.

Moreover, on page 8 of the Official Action, the Examiner contends that Carter is analogous art. Applicants respectfully disagree. The invention claimed in independent claims 1, 14, 33, and 38 is directed to a magnetic current loop system that produces strong near magnetic fields and canceling far magnetic fields. In contrast, Carter is directed to a television broadcast antenna system that is designed to produce strong far electric fields. In other words, the goal of the system in Carter is to radiate. In contrast, claims 1, 14, 33, and 38 recite canceling dipole magnetic fields produced by each current loop at distances far from the current loops. Accordingly, for this additional reason, it is respectfully submitted that the rejection of the claims as unpatentable over Bowers in view of Carter should be withdrawn.

New Claims

New claim 39 is proposed to be added. New claim 39 recites that the reactive compensation elements are located in different planes. Support for new claim 39 is found, for example, in Figure 7A of the present specification. New claim 39 is patentable over Bowers and Carter for the same reasons stated above with regard to independent claim 1. In addition, claim 39 is patentable over Carter and Bowers because Bowers teaches that antennas suitable for generating weak far fields are located in the same plane. (See column 2, lines 20-22 of Bowers.)

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CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

DEPOSIT ACCOUNT

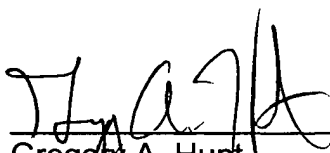
The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON & TAYLOR, P.A.

Date: January 24, 2005

By: _____


Gregory A. Hunt
Registration No. 41,085
Customer No. 25297

421/31 GAH/sed

Enclosures